

**ABSTRACT**

This invention relates to surgical methods and prosthetic devices for ameliorating hearing loss in patients having ailments of the middle ear. The implant of the invention includes a gas-filled balloon having a pliant membrane of biocompatible material. The balloon is made such that the acoustic impedance presented by the balloon to the eardrum is low enough to permit the eardrum to vibrate freely in response to sound waves. Because the balloon membrane is substantially impermeable to gases and water, the implant can function effectively within the middle-ear chamber for an extended period.

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